1987 Alabama Economic Outlook

Center for Business and Economic Research
The University of Alabama

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PREFACE

The **Alabama Economic Outlook** is an annual publication of the Center for Business and Economic Research, The University of Alabama. The **Outlook** draws heavily on the national and regional statistical resources of the Center as well as timely forecasts of national and international economic activity provided by Wharton Econometric Forecasting Associates.

The **Outlook** is a product of the Alabama Econometric Model. Forecasts of national economic activity are used to link Alabama (through a series of mathematical equations) to the nation, producing forecasts of Alabama economic activity. As a comprehensive and closed system of equations describing the Alabama economy, forecasts are produced by industry for Gross State Product (the regional equivalent to Gross National Product), employment, wages, and personal income.

The equations suggest a degree of both sophistication and precision. There is, however, a considerable amount of professional judgment required in the formulation of the mathematical relationships which link Alabama to the nation and in the acceptance of alternative forecasts of national economic behavior. Research economists at the Center have chosen equations which they believe best describe Alabama's economy as well as the most likely forecasts of national economic activity.

The **Outlook** begins with an overview of the U.S. and Alabama economies. Current economic conditions and trends and their likely effects on the future condition of the national and the State economy are briefly reviewed. These are followed by detailed Alabama forecasts for manufacturing; construction and mining; trade and services; finance, insurance, and real estate; transportation, communications, and public utilities; and government.

Thank you for your interest in the Alabama Econometric Model and the **1987 Alabama Economic Outlook.**

U.S. Economic Outlook

The *1986 Alabama Economic Outlook* forecasted national economic growth for 1986 to remain below 3 percent. December estimates of 1986 real Gross National Product (GNP) growth confirm last year's forecasts. Current estimates call for 1987 real GNP to grow 3.6 percent over 1986. Wharton Econometric Forecasting Associates' latest forecast still shows that current expansion will run through 1988 with real growth sharply lower in 1989.

Recent Developments

As in 1986, the U.S. economy continues to send mixed signals. Monthly indicators, such as housing starts, industrial production, and capacity utilization point to continued lackluster performance in the first quarter of 1987. The fundamental forces driving the economy, however, still point to stronger growth ahead. Inflation remains low, interest rates have drifted lower, and the value of the dollar continues to decline.

While the final impact of the tax bill is still unclear, most observers believe the net effect will be positive. The most recent cut in the discount rate along with cuts in European and Japanese rates will continue to stimulate the national and world economy. Finally, the oil market appears to be settling down as major OPEC producers move toward tentative agreement on production quotas. Reduced uncertainty in energy prices will be a welcome relief.

Short-Term Outlook

Some of the fourth quarter 1986 growth was borrowed from 1987 as consumers and firms prepared for life after tax reform.

- General Motors and other automotive manufacturers' incentives shifted sales from early 1987. Many consumers took advantage of the 1986 sales tax write-off, and the switch from a three- to a five-year write-off for new automobiles spurred fourth quarter business purchases.

- The recent wave of mortgage refinancing will help support the consumption of big ticket items and reduction in existing short-term debt. Such a reduction, should it prove to be significant, could help insure continued consumer activity through 1988.

- The 1986 surge in capital gains realizations—in response to the elimination of preferential capital gains taxation in 1987—will further help support the consumption of durable goods.

- Fourth quarter 1986 layoffs in the automotive and telecommunications industry raised a continued concern for international cost competitiveness of U.S. companies.

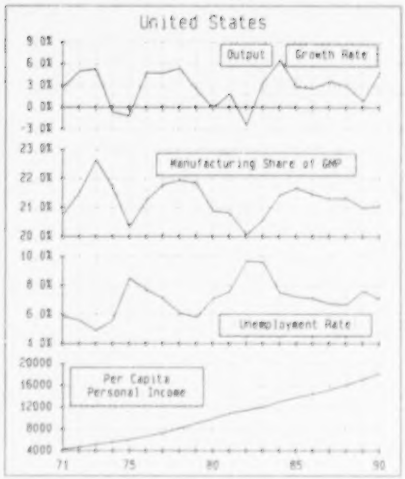
However, the fundamentals for strong growth in 1987 remain in place.

- The trade deficit will slowly begin to turn around because of the weaker dollar.

- Interest rates have dropped substantially and are expected to continue to move down through the second quarter of 1987.

- Energy costs will remain low and appear to have stabilized.

- Overall, consumer spending is expected to remain strong.



ALABAMA OVERVIEW

Introduction

The 1987 outlook for the Alabama economy is good. While economic growth at both the national and regional levels did not fully achieve earlier expectations, the U.S. and Alabama economies did experience real growth through 1986 and the basic forces are in place for continued growth through 1987. Consider the following trends:

- The continued decline in the value of the dollar makes Alabama's lumber, textile, apparel, chemical, and rubber products more competitive in both domestic and international markets.
- Falling interest rates should continue to strengthen residential and nonresidential construction and real estate activity.
- In 1987 Alabama will begin to realize the economic benefits of many new commercial and industrial capital investments begun in 1986. Examples include: the airport expansion, office complexes, and horse racing track in Birmingham; Tuscaloosa Steel and the JVC tape and compact disc plants in Tuscaloosa; and Boeing among others in Huntsville.
- Strong demand for aerospace, electronic, and computer related hardware and software continue to propel the Madison County economy.
- Increased traffic on the Tennessee-Tombigbee Waterway as well as improved port facilities and continued strong domestic and international demand for chemical products should combine to stimulate the Mobile economy.
- Increased factory orders, first seen in the third quarter of 1986, should continue to improve industrial demand for Alabama durable goods. As in 1986, the Alabama economy faces economic risks in the months ahead.

Alabama Highlights:

	1987	1988	1989	1990
Real Gross State Output				
Growth Rate	4.2%	3.7%	1.5%	5.0%
Per Capita (GSP/GNP)	74.9%	75.7%	76.3%	76.5%
Per Capita Personal Income				
Per Year (Cur $)	$12,100	$13,000	$14,200	$15,000
Percent of U.S.	79%	81%	83%	82%
U.S. Deflators (Growth Rates)				
Personal Consumption	3.7%	4.7%	5.9%	3.5%
Consumer Price Index	3.1%	5.0%	6.1%	3.7%
Unemployment Rate				
Alabama	9.1%	9.0%	10.4%	9.5%
U.S.	6.7%	6.7%	7.6%	7.0%

On the downside:

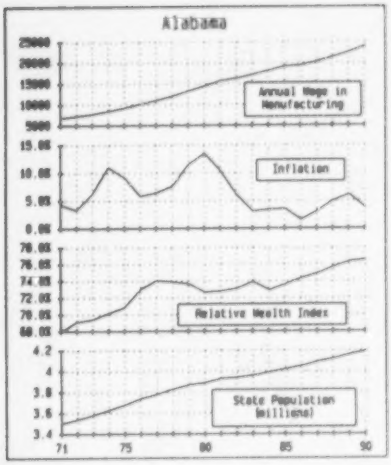
- While many consumers have refinanced their debt through new home equity loan programs, total consumer debt as a percent of total personal income remains high. Should consumer optimism about future economic growth wane, consumer spending could cool, slowing economic growth further.
- Continued concern over financing the mounting federal deficit could push interest rates up, slowing all capital investments.

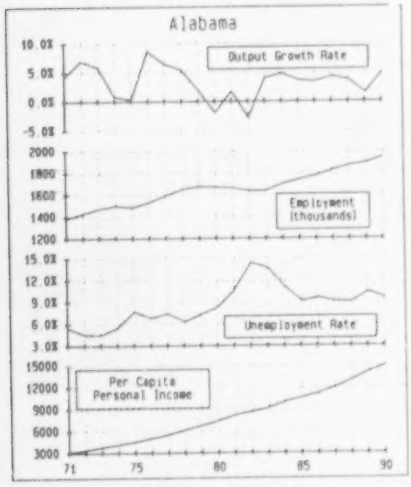
Gross State Product

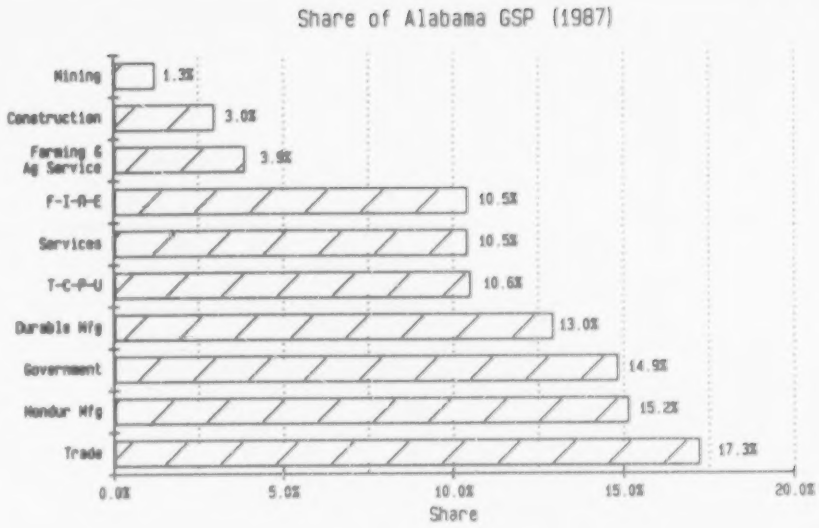
Alabama real Gross State Product (GSP) is equal to the total dollar value of all goods and services produced in Alabama in any given year.[1] As the state equivalent of U.S. Gross National Product, Alabama GSP is an excellent aggregate measure of the health of the State economy. In addition, the real GSP growth rates are considered to be good comparative measures of economic activity over time. As a prelude to the current forecast, the following paragraphs offer a brief review of Alabama's recent economic history.

During the 1975 recession Alabama did not suffer as badly as the U.S. on average. However, the double dip recession of 1980 and 1982 (hereafter 1980/1982) proved to be devastating for the Alabama economy. From 1979 to 1982 Alabama lost over 37,000 manufacturing jobs and suffered a 1.4 percent decline in real GSP. Only now are many Alabama industries returning to 1979 levels of economic activity. By comparison, current

[1]In economic terminology the word *real* indicates that an economic variable (e.g. *real* GNP) is expressed in dollars of constant value, that is, dollars not influenced by inflation. In the Alabama Econometric Model, all *real* variables are expressed in 1972 dollars. By way of contrast, variables may also be expressed in "nominal" dollars. Nominal dollars are the ordinary dollars exchanged in daily commerce. Due to inflation, nominal dollars (sometimes also called "current" dollars) are not of constant value. The growth rates of variables expressed in nominal dollars are, therefore, misleading because *real* growth is compounded with inflationary growth. However, because all business and government accounting is in terms of nominal dollars, it is necessary and useful to have variables expressed both ways.







estimates show GNP declined only 0.6 percent over the same period.

As a part of the continuing study of the Alabama economy, the Center for Business and Economic Research of The University of Alabama has sought to understand why Alabama was hurt so much worse than the nation as a whole during the 1980/1982 recession. Two factors seem to account for much of the difference: Alabama's heavy investment in primary metals (steel and aluminum) whose decline was accelerated by the recession; and the differing level of U.S. inventories in 1975 versus 1980/1982. Because inventory levels were low going into the 1975 recession, backorders and new orders were sufficient to sustain real growth, albeit modest—0.75 and 0.27 for 1974 and 1975 respectively. However, in 1980/1982 U.S. inventories were estimated to be much higher. As a consequence the level of backorders was low and virtually no new orders were received until late in the recession, pushing Alabama deeper into recession and delaying Alabama's recovery.

However, for the past twenty years with the exception for the recession years, Alabama has on average grown faster than the U.S. as a whole. For example, over the fifteen year period 1971 to 1986 real GNP grew an average of 3.2 percent a year while Alabama GSP grew an average of 4.1 percent—a difference of 0.9 percent. Recent estimates for 1985 and 1986 put this difference at 0.9 and 0.8 percent respectively.

While GSP and GNP growth rates offer one view of economic performance, per capita GSP and per capita GNP can be used to study the relative wealth of Alabama and the nation as a whole. Per capita GSP and per capita GNP are computed by dividing each output product measure by the appropriate geographic population. Thus, per capita GSP is simply Alabama's Gross State Product for a given year divided by Alabama's population for that same year. Per capita GNP is computed in a like manner—dividing Gross National Product in a given year by the population of the U.S. in the same year.

Per capita GSP can be interpreted as a measure of the wealth of the average Alabamian. And, per capita GNP is a measure of the wealth of the average American. Given that the two measures are computed on a comparable basis (output per person in Alabama versus output per person in the U.S. as a whole), the ratio of these two numbers is a measure of Alabama's *relative* wealth. This wealth index is computed by dividing Alabama per capita GSP by per capita GNP. If Alabama per capita GSP were equal to per capita GNP, then the result would be equal to 1.0 or 100 percent indicating equal wealth. However, what one finds is that Alabama per capita GSP is noticeably lower than per capita GNP.

In 1986 Alabama per capita real GSP was estimated to be $5,246,

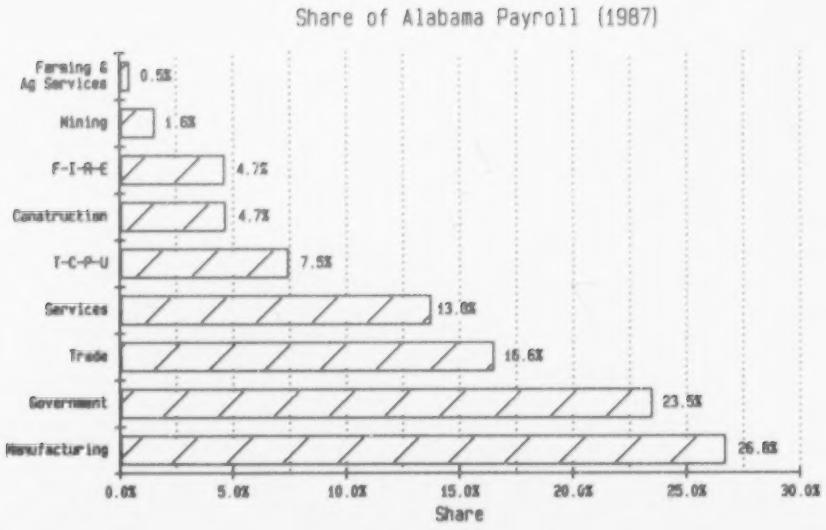
compared to U.S. per capita real GNP of $7,059 for an index of 74 percent. Using per capita output as a basis of comparison, Alabamians are on average only 74.3 percent as wealthy as the average American. The standard of living of the average Alabamian is 26 percent less than that of the average American.

This is not to suggest that Alabama has not made considerable progress toward an improved standard of living. In 1970 the relative wealth index was 67 percent. It is expected to continue to rise, and is forecasted to reach 76.6 percent in 1990. However, if this is to happen Alabama must continue to diversify its industrial base by attracting those industries associated with high value added products or services. That is to say, an industry's manufacturing process must contribute substantially to the worth of the end product through the transformation of valuable materials by skilled labor. Industries that employ low skilled workers are prime candidates for outsourcing (exporting the "jobs" overseas to cheap labor markets), and their traditional low wage rates work to keep Alabama one of the poorest states in the nation.

Outlook

As indicated earlier, Wharton's most recent national outlook forecasts an economic slowdown in 1989 followed by a recovery in 1990. The current Alabama forecast calls for real GSP to grow by 4.2 percent in 1987 before slowing to 3.7 percent in 1988. Gross National Product is expected to show real growth of only 0.8 percent in 1989. Alabama real GSP in turn is expected to slow further, growing less than 1.5 percent in 1989 before recovering in 1990 with forecasted growth of 5.0 percent.

Based on the 1975 and 1980/1982 recession history, one could argue that Alabama might slow more quickly than the U.S. and suffer a worse decline. We do not believe this will be the case. Alabama's manufacturing sector went through a major structural realignment as a result of the 1980/1982 recession with labor and capital moving into more stable and profitable areas. New industries have further diversified the industrial base. Alabama is in far better shape now to weather another economic storm than it was earlier in the decade.



MANUFACTURING

U.S. industrial activity has been very slow to respond to traditional stimulative influences. Lower inflation and interest rates and a weaker dollar should boost demand; and lean inventories should lead to increased levels of production as demand picks up. So far only isolated sectors—mainly consumer goods—have responded. And unfortunately, what growth that has occurred has been offset by the negative impact of lower oil prices on the oil and gas industry.

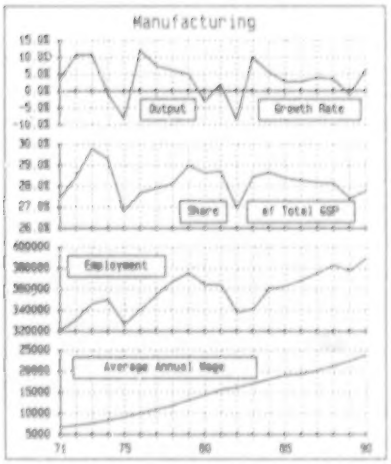
Wharton estimates U.S. real manufacturing output grew 1.6 percent in 1986 and projects a 2.9 percent growth rate for 1987. In 1988 manufacturing growth is expected to continue at a moderate 3.0 percent rate before falling to -0.9 percent during 1989's general economic slowdown. A recovery in 1990 should see manufacturing output pick up with 5.5 percent growth.

With the exception of the recession years, the Alabama economy has outpaced the U.S. economy as a whole by a percentage point or more every year for the past 25 years. Not unexpectedly, given the "developing economy" nature of Alabama industries, this pattern is expected to continue over the present forecast horizon. However, the growth of Alabama real manufacturing output (the total dollar value of all goods produced by Alabama's manufacturing industries adjusted for inflation) has slowed over the past four years. The balance of the decade should see moderate growth marred by the slump currently forecasted for 1989.

Alabama real manufacturing output for 1986 was estimated to have grown 2.9 percent and is forecasted to grow 4.0, 3.6, and -1.1 percent respectively in 1987 through 1989. The slump in 1989, characterized as a growth pause by Wharton economists, is expected to hit Alabama harder than the nation as a whole. This is a continued reflection of a pattern set during the 1980/1982 recession when Alabama suffered worse than the U.S. but put on a stronger recovery. The current forecast calls for 6.5 percent real manufacturing growth for 1990, 0.9 percent higher than the nation as a whole.

1986
Share of Gross State Product and Total Employment for Selected Nondurable Goods Industries
(Percent)

	GSP	Share of Total Employment
Food and Kindred Products	2.2	1.5
Textiles	2.8	2.3
Apparel	2.4	3.2
Paper and Allied Products	2.9	1.3



While one can compute the "relative importance" of a state's industrial activity in several ways, the most widely accepted approach is also the simplest—sector share of the total. Thus, gross output for each sector (the total dollar value of goods and/or services produced by that sector) is divided by total gross state product. The resulting percentage "share" is a direct measure of how much any given industrial group contributes to the total state economy. Alabama's manufacturing industries have consistently accounted for between 27.5 to 28.5 percent of Gross State Product, or somewhat more than a quarter of all goods and services produced in the State. Manufacturing's share of total GSP is expected to be 28.2 percent in 1987.

Nondurable Manufacturing

Manufacturing employment currently accounts for approximately 20 percent of all Alabama workers—equally divided between nondurable and durable goods industries. Nondurable manufacturing, which accounted for 14.9 percent of GSP in 1980, is expected to reach 15.1 in 1987.

Food and Kindred Products

This major industry group includes establishments manufacturing or processing foods, beverages, and certain related products, such as ice, potato chips, lard, shortening, and prepared animal feeds. Manufacturing food products is a big industry in Alabama, accounting for 2.2 percent of GSP in 1986 and employing 1.5 percent of all Alabama workers. Food processing plants have an output per employee that is higher than average. Such industries can be characterized as higher value added and usually pay higher than average wages. As such, new or expanded facilities in this industry group would be considered desirable.

The current forecast calls for continued growth in food and kindred products. Growth in real output in

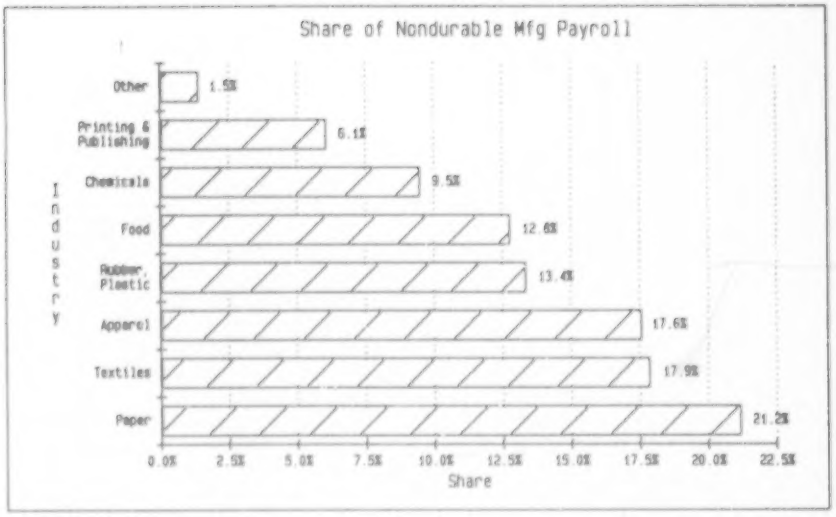
1987 should top 4.5 percent. Growth is expected to slow in 1988 with 1989 characterized by very modest growth to moderate declines in real output. This industry group, somewhat less resilient than others, shows 3.3 percent real growth in 1988, no growth in output in 1989, followed by a strong 7.2 percent recovery in 1990. Employment is forecasted to increase to 28,600 workers by 1990, growing an average of 1.0 percent a year except 1989 when employment may decline by 100 to 150 workers.

Food and kindred product workers earned an average annual wage of $15,900 per year in 1986, $2,100 less than the nondurable average of $18,000. Expected to increase an average of 5.8 percent a year, the average annual wage should rise to $19,600 by 1990. Given modest expectations for inflation, food and kindred product workers should experience a real increase in their standard of living over the balance of the decade.

Textiles

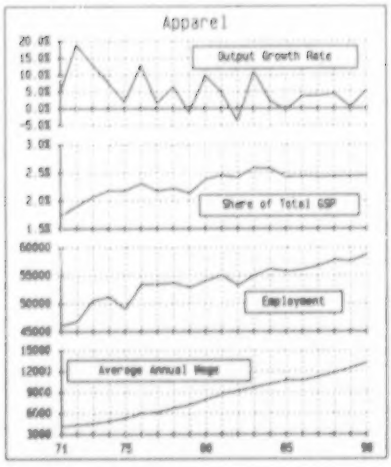
Textile manufacturers produce such items as broad-woven fabrics (bolts of cloth), narrow-woven fabrics (rickrack, ribbon, webbing, etc.), and cord, twine, and nets. Knitting mills, carpet mills, and yarn mills also are in this industry group. Alabama has many medium-size textile firms with employment between 20 and 75 people as well as several large firms with hundreds of employees.

Accounting for 2.8 percent of GSP in 1986, textile manufacturing is the second largest nondurable industry following only paper and allied products. From a high of 2.9 percent in 1980, textile's importance to the Alabama economy is expected to decline slightly through the balance of the decade to a 2.6 percent share of GSP in 1990. Textile employment's share of total employment, accounting for 2.3 percent of all workers, is also declining. After reaching a high of 3.4 percent in



1973, textile's employment share has declined steadily and is expected to fall to 2.0 percent by 1990.

Growth in textile's output is projected to be somewhat lower than the Alabama economy as a whole. The present forecast calls for textile output to grow 3.5 percent in 1987, 2.6, -0.3, and 3.9 in 1988 through 1990 respectively. The textile industry has an erratic growth history, exhibiting extreme sensitivity to both national and international economic business cycles. Should textile imports continue to make inroads in the U.S. market, Alabama's textile industry as a percentage of total GSP may contract faster than currently forecasted. Textile employment, estimated to be 40,400 workers in 1986, is expected to decline to 39,200 by 1990 or an average of -0.8 percent a year. The greatest loss is forecasted for 1989 when the industry could lose as many as 1,300 jobs.



In the nondurable industry group textile wages compare favorably to those of food and kindred product workers, averaging $15,300 per year in 1986. In spite of employment losses, the average annual wage is expected to increase to $19,100 by 1990.

Apparel

Alabama's apparel industry is engaged in producing clothing and other products by cutting and sewing purchased fabrics and related materials such as leather, plastics, and furs. Many large manufacturers, several of which are divisions of national and international garment producers, are part of Alabama's apparel industry. Products made in Alabama are as diverse as surgical face masks and children's play clothes.

Apparel's share of 1986 GSP ranks

third among Alabama's nondurable goods industries. While not considered a growth industry, the apparel industry is expected to hold its share of GSP over the balance of the decade. However, apparel's employment share is expected to decline steadily through 1990. Following a high of 3.4 percent in 1976, apparel's share declined to an estimated 3.2 percent in 1986 and is expected to decline to 3.0 in 1990.

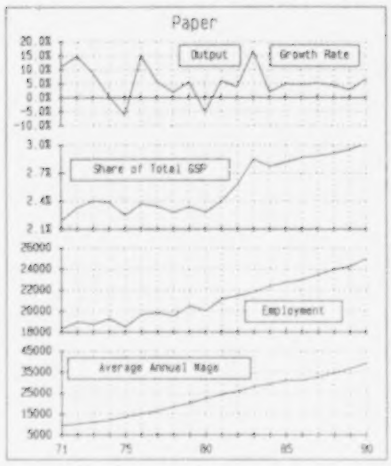
Apparel output is expected to experience real growth every year through 1990, averaging 3.8 percent a year. Employment is expected to continue to grow, rising to 58,800 workers in 1990—an increase of 2,700 jobs over 1986.

Unlike the food worker or the textile worker, the average apparel worker takes home a very modest wage—estimated to be $10,700 per year in 1986. As a result, while apparel wages are expected to grow an average of 6.0 percent a year through 1990, the resulting increase in Alabama total personal income will be modest at best. Such low wages will work to keep Alabama one of the poorest states in the nation.

Paper and Allied Products

The paper industry makes paper and products from paper. Several large mills have been in Alabama for decades. Many of these pulp mills, paper mills, and paperboard mills are divisions of large corporations and employ hundreds or thousands of persons at one site. There are similarly a number of mills employing fewer persons, as well as several entrepreneurs who have between five and twenty employees and whose companies make such things as envelopes, bags, stationery, cardboard boxes, tubes, wallboard, and cartons.

Output from the paper industry group as a percent of total GSP has risen steadily over the past twenty years. Accounting for 2.9 percent in 1986, paper is expected to produce



3.0 percent of GSP by 1990. Employment, on the other hand, should account for a fairly constant 1.3 percent of total employment.

Growth in output from the paper industry should also remain strong through 1990 averaging over 5.3 percent a year. Of particular note is the anticipated 2.9 percent real output growth rate for 1989, a year marked by far more modest growth or declines in most industries. Equally impressive is the projected growth in employment, rising from 23,000 in 1986 to an all time high of 25,000 in 1990—an average increase of 2.2 percent a year and no decline projected of 1989.

An important and sustained performer in Alabama's industrial mix, the paper industry also pays excellent wages. The estimated average annual wage in 1986 was $31,000, highest of any manufacturing or nonmanufacturing industry in Alabama. Wage growth should also remain strong, with the average annual wage expected to rise to $39,400 by 1990.

Durable Manufacturing

Durable manufacturing's output share, suffering from significant declines in the primary metals industries (principally steel and aluminum), is expected to be 13.0 percent in 1987—down from 13.7 in 1980. And, growth in durable manufacturing output is forecasted to be lower for the balance of the decade than total Alabama Gross State Product. As a result, durable manufacturing's share of total GSP is expected to continue a gradual decline to 12.6 percent in 1990.

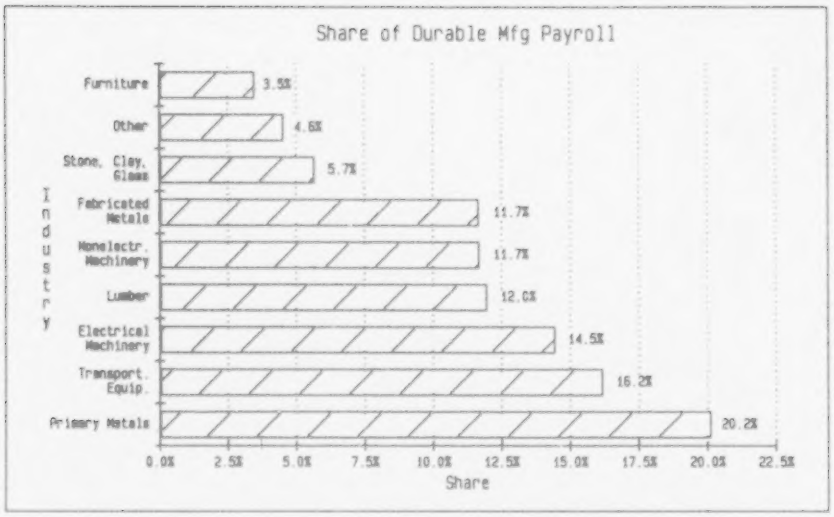
Durable manufacturing's share of total employment is also expected to drop from 10.1 percent in 1986 to 9.8 percent in 1990. While the economic slowdown forecasted for 1989 could result in the temporary loss of 800 nondurable manufacturing jobs, durable manufacturing could lose as many as 5,000. The majority of these layoffs would be in the lumber, primary metals, and fabricated metals industry groups.

Lumber

This major industrial group includes logging camps engaged in cutting timber and pulpwood; sawmills, lath mills, shingle mills, cooperage stock mills, planing mills, plywood mills, and veneer mills

1986
Share of Gross State Product and Total Employment for Selected Durable Goods Industries
(Percent)

	GSP	Share of Total Employment
Lumber	1.9	1.7
Primary Metals	2.1	1.5
Electrical Machinery	1.9	1.4
All Transportation Equipment	2.2	1.4

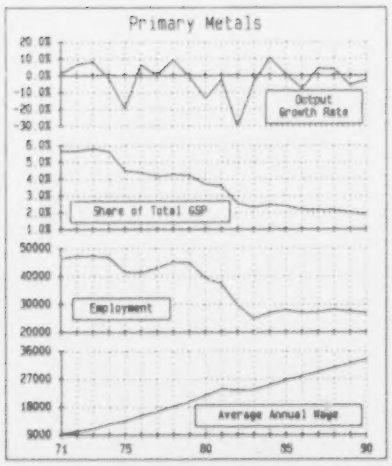


engaged in producing lumber and wood basic materials; and establishments engaged in manufacturing finished articles made of wood or wood substitutes. One anomaly of this industry is that portable classrooms, prefabricated offices, and mobile homes are classified here.

The lumber industry in Alabama accounted for 1.9 percent of GSP in 1986 and employed over 29,700 workers, representing 1.7 percent of total employment. The next two years, 1987 and 1988, should see moderate growth in output for lumber, 3.5 and 2.4 percent respectively. Particularly sensitive to the business cycle, lumber activity will drop sharply with the forecasted economic decline in 1989 with output falling over 10 percent and employment layoffs approaching 2,000 persons. However, 1990 should see a strong recovery with output rebounding over 20 percent and employment returning to slightly above 1988 levels.

Unfortunately, such volatile swings are characteristic of the lumber industry. The 1975 recession saw lumber output fall over 14 percent followed by a 13.4 percent recovery in 1976. During the 1980/1982 recession the Alabama lumber industry actually suffered four straight years with output falling a total of 16.2 percent from 1979 to 1982. Not until 1984 did the lumber industry recover to the 1978 level.

This industry is a staple of many rural counties. Their heavy dependence on such a cyclical industry leads to unavoidable economic losses during periods of national economic decline. While it is clear that Alabama can enjoy a comparative advantage with the lumber industry, it is equally clear that a more diversified industry base could serve to soften the periodic economic blows to rural counties.



Wages for the lumber industry are about on par with those in the food and textile industries. Lumber's average annual wage was estimated to be $15,000 in 1986 and is expected to grow an average of 6.6 percent a year, rising to $19,000 by 1990.

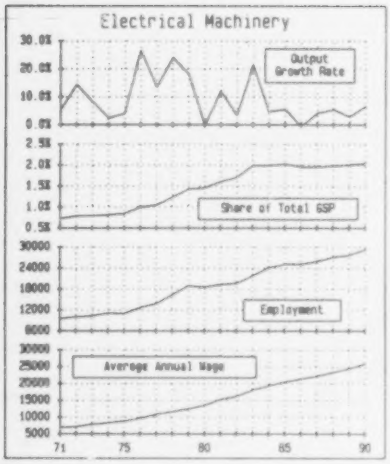
Primary Metals

The primary metals industry includes establishments engaged in the smelting and refining of metals from ore, pig, or scrap; in the rolling, drawing, and alloying of metals; in the manufacture of castings and other basic products of metals; and in the manufacture of nails, spikes, and insulated wire and cable. This group also includes the production of coke.

In Alabama, primary metals industries include firms working with both steel and aluminum. Both, as is the case nationally, have suffered badly over the past ten years. Hit hard by the 1975 recession when real output fell almost 20 percent, Alabama output in the primary metals industry has never recovered. Output in 1973 was valued at $870 million. It has never regained that level and in 1986 was estimated to be only $460 million. The outlook for the industry as a whole is not bright. While production is expected to increase modestly in 1987 and 1988, a real decline is forecast for 1989; and 1990 is expected to be no higher than the 1986 level.

One success story in primary metals is the growing acceptance of the mini- or specialty-mill. An excellent example is Tuscaloosa Steel, a specialized rolling mill that should prove to be very competitive. Such facilities, highly automated and using the latest in manufacturing technology, have been able to reduce significantly the cost of production and to greatly improve their competitive position worldwide.

However, as a result of the overall decline, the primary metals industry



no longer plays the major role it once did in the Alabama economy. Accounting for 5.7 percent of GSP in 1971, primary metals' share was estimated to be 2.1 percent in 1986 and is expected to fall to 1.9 percent by 1990. As has been the historical pattern, the average annual wage is expected to continue to rise reaching $33,400 in 1990, up from $28,000 in 1986.

Electrical Machinery

This major group includes firms which manufacture machinery, apparatus, and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy. This industry is related to the nonelectrical machinery industrial group but is more likely to have a *high-tech* flavor. Grouped here are Alabama businesses making telephone and communications equipment, radar and sonar, and electronic components. Madison, Tuscaloosa, Jefferson, Montgomery, Houston, and Mobile counties among others have enjoyed growth in this industry in recent years.

Accounting for only 0.7 percent of GSP in 1971, this industry group was responsible for 1.9 percent of Alabama's economic output in 1986. This represents a 310 percent increase in electrical machinery gross product over the past 16 years. The current forecast calls for its share of GSP to rise to over 2 percent by 1990, and in the process to grow throughout the balance of the decade, avoiding the forecasted slump in 1989.

Employment has also risen—from 9,500 persons in 1971 to an estimated 25,000 workers in 1986. In 1990 employment in this industry is forecasted to reach 29,300, surpassing primary metals at 26,800. The growth of electrical machinery must be marked as one of Alabama's real success stories.

Wages have grown steadily in this industry but appear never to have outpaced productivity gains. In 1986 the estimated average annual wage was $21,400 and is forecasted to reach $26,000 in 1990. When considered along with the industry's resilience to recent swings in the business cycle, the electrical machinery industry has been a major contributor to an improved standard of living in Alabama.

All Transportation Equipment

This major group includes establishments which manufacture equipment for transportation by land, air, and water, excluding motor vehicles. Such products include aircraft, guided missiles and space vehicles, ships, boats, railroad equipment, and miscellaneous transportation equipment such as motorcycles, bicycles, and snowmobiles.

Accounting for 2.3 percent of Alabama output in 1971, this industry group was estimated to have contributed 2.2 percent to Alabama's GSP in 1986. Industry output as a percent of Gross State Product is expected to continue to decline, falling to 2.0 by 1990. However, while its relative contribution will decline slightly over the balance of the decade, real output is expected to grow every year through 1990 albeit modestly. Growth through 1990 should average about 2.2 percent a year.

Likewise, employment in the industry is expected to increase slightly from 24,700 in 1986 to 25,100 in 1990. Transportation equipment's average annual wage, estimated to be $24,800 in 1986, is expected to rise to $31,000 by 1990.

Construction and Mining

Construction

Construction in Alabama, among the industries hardest hit by the 1980/1982 recession, experienced a modest recovery in 1983 and 1984 when real output grew 2.2 and 3.0 percent respectively. The following year, 1985, saw the recovery slow nationwide. In Alabama, the construction industry slowed considerably, with output basically unchanged from the year before. Current estimates suggest construction is again coming back and 1986 growth is estimated to be 4.6 percent.

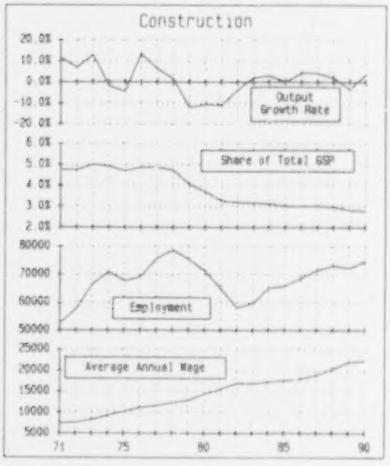
The construction industry in Alabama plays an important role in the State's economy. Construction is the major industrial group responsible for building the State's infrastructure and production facilities and has historically accounted for 3.5 to 4.0 percent of GSP. As activity in services and trade has increased over the past decade, construction's share has fallen steadily to 3.0 percent in 1986. The current forecast calls for construction's share of GSP to continue to decline through 1990 when it is expected to be 2.8 percent.

At the national level, contract construction accounts for 4.7 percent of Gross National Product. From 1971 to 1980 U.S. contract construction actually shows a 0.68 percent decline. However, over the same period contract construction in Alabama grew 9.7 percent. As interest rates continued to rise, the worst of the recession hit construction in Alabama a year later. From 1980 through 1982 Alabama construction output fell 14.7 percent.

The present forecast shows Alabama's construction industry holding its own through the decade. Averaging 1.6 percent growth in output per year, growth in 1987 should remain strong at slightly more than 4 percent before sliding into the 1989 slump with 1.7 percent growth in 1988 and a decline of 3.4 percent in 1989.

In 1985 construction employed 68,700 persons or 3.9 percent of all Alabama workers. Nationwide contract construction accounted for 4.5 percent of the civilian labor force in 1986. Construction employment is expected to increase in Alabama to 74,800 by 1990. However, the forecasted 1989 economic slowdown is expected to hit construction employment fairly hard with an anticipated temporary reduction of approximately 1,000 workers.

Construction wages are about on par with nondurable manufacturing, averaging $17,900 per year in 1986. Growth in construction wages should average about 6.1 percent a year through 1990, rising to $22,300 by the end of the decade.



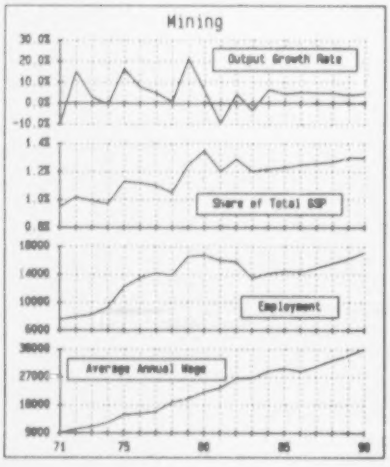
Mining

The mining sector which consists of metal ore mining, coal mining, oil and gas extraction, and quarrying contributed 1.3 percent to Alabama's GSP in 1986—compared to 3.5 percent in the U.S. as a whole. Unlike the U.S. where 80.8 percent of the mining sector activity comes from crude petroleum and natural gas, Alabama's mining sector is dominated by bituminous coal mining, which accounts for about 70 percent of all mining employment. Hurt badly by the decline in oil prices in 1986, coal mining will be slow to recover as long as alternative fuel prices remain low.

Mining employment is expected to rise only slightly during 1987, reaching 14,900 up from 14,300 in 1986. An industry characterized by high labor productivity, mining employment accounts for less than 1 percent of total Alabama employment.

The industry is expected to do well over the balance of the decade. The stabilization of oil prices by OPEC is expected to help both the coal and natural gas mining and exploration. Mining output is expected to average over 4 percent real growth each year through 1990 with the exception of 1989 when the forecast calls for 3.5 percent growth.

Traditionally mining wages have been among the highest of any industry, rivaled only by the paper and primary metals manufacturing industries. The 1986 average annual wage was estimated to be $28,900. Should mining grow as forecast, wages are expected to rise rapidly reaching $36,200 a year in 1990.



TRADE AND SERVICES

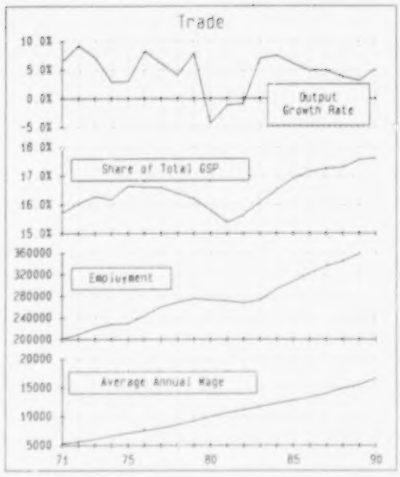
Trade

Trade makes a significant contribution to both Alabama Gross State Product and total employment. In 1986 trade accounted for 17.2 percent of GSP and almost one of every five Alabamians was employed in trade. The two components of this industry group are wholesale and retail trade. However, retail trade is by far the larger of the two, estimated to account for 75 percent of total trade employment.

Dependent on consumer spending, trade activity is traditionally very sensitive to the business cycle. Following a real decline of over 4 percent in 1980 and modest declines in 1981 and 1982, the industry grew quite vigorously through 1986. The present forecast calls for growth in trade to remain strong through 1990, averaging 4.6 percent a year.

Trade employment is also expected to continue to grow. An important source of jobs, particularly for the unskilled worker, trade employment accounted for 16.4 percent of all workers in 1980. By 1986 trade employment had reached 18.2 percent of total employment. The present forecast calls for trade employment to reach 366,700 persons or 18.8 percent of total employment in Alabama in 1990. By way of comparison, 21.5 percent of all U.S. workers are employed in either wholesale or retail trade.

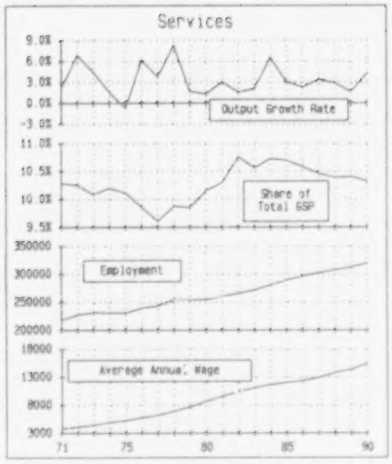
Trade wages are among the lowest of any industry group. Within private, nonagricultural employment only the wages of apparel workers in nondurable manufacturing and those of service workers are lower. The average annual trade wage rose from $10,000 in 1980 to only $13,400 in 1986, an increase of 34 percent. Over the same period the cost of living rose 34 percent. In effect, trade workers on average did not experience any real growth in wages (change in their standard of living) but have kept pace with inflation. Wages are expected to reach $16,700 in 1990.



Services

No other industrial sector of the economy can match services in diversity. Service employment ranges from highly educated, highly specialized, highly paid professionals to jobs which make few educational or skill demands on their incumbents and pay minimum wage or less. The majority of service employment is clustered toward the low end of the spectrum and this is where most future service employment gains are expected. Among the service industries are lodging places; personal, business, and repair services; amusement establishments; and health, legal, engineering, and other professional services.

Like trade, the services industry plays a major role in the Alabama economy, accounting for 10.6 percent of Alabama GSP in 1986. Resilient during periods of general economic decline, the service industry has experienced uninterrupted growth since 1975. Services employed an estimated 296,900 persons in 1986, and the industry's share of total employment has risen from 15.3 percent in 1980 to an estimated 16.7 percent in 1986. As in the case of trade, Alabama service employment as a percentage of total employment is approaching the national average of 20.5 percent of the work force.



Growth in service industry output over the next four years is expected to be slightly less than the State as a whole, 12.4 percent versus 15.2 percent. However, as during the 1980/1982 recession, the service industry is expected to experience real growth through the 1989 slowdown.

Wages in the service industry have a wide range. Physicians belong to this industry as do private security guards. Overall, occupations at the low end of the scale prevail. In 1986 the average service worker had an estimated average annual wage of $12,400. As a result, while services contributed an estimated 10.6 percent to total GSP, service workers only earned an estimated 8.1 percent of Alabama's total personal income.

Finance, Insurance, and Real Estate

The finance, insurance, and real estate (FIRE) sector accounts for less than 4 percent of the State's employment but produces over 10 percent of Alabama's Gross State Product. Nationally, this sector employs 5.5 percent of all workers and in 1986 produced 16.4 percent of Gross National Product. This industry is divided into banking and nonbanking components. Nonbanking employs twice as many people as does banking and produces five times the output. Combined, FIRE workers are the most productive of any industrial or commercial sector in Alabama, producing more than four dollars in output for every dollar of wage.

FIRE Highlights

	1987	1988	1989	1990
Real FIRE Output				
Growth Rate	3.8%	3.5%	3.0%	3.5%
Share of Total GSP	10.5%	10.4%	10.6%	10.4%
Employment				
Number of Workers	67,400	68,700	70,900	72,600
Share of Total	3.7%	3.7%	3.7%	3.7%
FIRE Wages				
Average Annual Wage (Cur $)	$19,800	$21,100	$22,300	$23,700
Growth Rate	5.3%	6.5%	5.7%	6.3%

Following a severe banking decline in 1982, the Alabama banking industry has come back to grow at 5.0 percent for the past four years. Banking is forecasted to grow steadily through 1990 reflecting the new era of bank deregulation and consolidation. Insurance and real estate establishments are also expected to do well, growing on average more than 3 percent a year over the forecast horizon. Such growth is of course contingent on stable interest rates which will be particularly important to the orderly growth of both residential and commercial real estate.

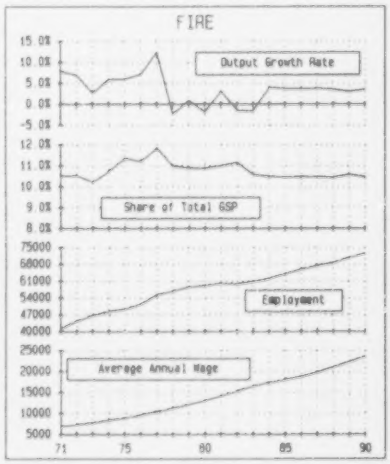
The current national forecast calls for interest rates to move up slowly over the next four years. The market yield on three month treasury bills is expected to drift slowly upward from an estimated 6.77 percent in 1986 to 9.45 in 1990. Inflation uncertainty has historically lead to upward pressure on interest rates. And while the entire economy benefits from stable Federal Reserve Board policies, banking and real estate benefit significantly. The big question is whether the Federal Reserve will feel compelled to lower the discount rate as it did in late 1986.

In 1986 the Federal Reserve Board felt that if U.S. rates fell while those of major U.S. trading partners (notably Japan and West Germany) did not, then the flow of funds into the United States would slow—causing greater difficulty in financing the Federal deficit and possibly causing rates to rise. If the economy remains weak well into 1987, it is almost certain the Fed will again lower the discount rate. If the economy picks up quickly in response to lower oil prices, interest rates, and the declining value of the dollar, then further reductions are unlikely.

Employment in FIRE was estimated to be 66,000 jobs in 1986 (22,000 in banking and 44,000 in nonbanking), accounting for 3.7 percent of total Alabama employment. Total employment grew only 6.6 percent from 1980 to 1986. FIRE, however, has enjoyed steady growth over the period with growth equally divided between banking and nonbanking and totaling 11.4 percent.

FIRE employment is expected to grow an average of 2.5 percent a year over the balance of the decade. Such increases would be well below the anticipated average annual real output growth rate of 3.7 percent, leading to continued productivity increases over the next three years.

While wages in the banking industry are traditionally low, averaging $16,300 in 1986, wage increases have outpaced inflation since 1980, averaging slightly more than 7 percent a year. The average annual insurance and real estate wage rate, while higher at $20,200, has done equally as well. The wage gap within the sector is expected to widen. A banking employee will earn an average annual wage of $19,600 in 1990. The average annual wage for a nonbanking worker is expected to top $25,800.



Numbers such as wages and number of persons employed have been rounded for ease of presentation.

Transportation, Communications, and Public Utilities

The transportation, communications, and public utilities sector (TCPU) is a major contributor to the Alabama economy—the source of more than 10.5 percent of GSP. Within this sector the communications industry produces the largest output share at 4.5 percent of total GSP, followed by public utilities and transportation with 3.6 percent and 2.5 percent respectively. TCPU plays a larger role in the State's economy than in the U.S. as a whole. The TCPU industrial group employs 74,900 workers or 4.2 percent of Alabama employment.

TCPU Highlights

	1987	1988	1989	1990
Real TCPU Output				
Growth Rate	4.5%	4.0%	2.0%	4.4%
Share of Total GSP	10.6%	10.6%	10.6%	10.6%
Employment				
Number of Workers	76,700	78,500	79,500	81,400
Share of Total	4.2%	4.2%	4.2%	4.2%
TCPU Wages				
Average Annual Wage (Cur $)	$27,900	$29,500	$31,100	$33,400
Growth Rate	5.1%	5.8%	5.5%	7.6%

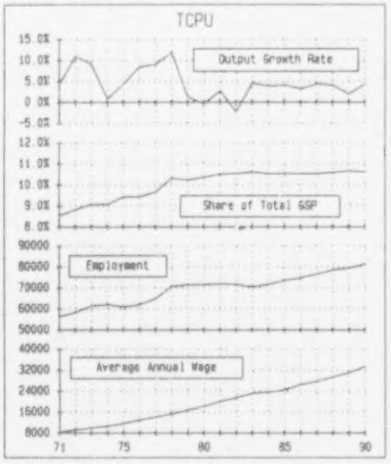
Transportation

As Alabama's industrial base has grown, transportation as a percentage of total GSP has declined. Accounting for 3.2 percent of GSP in 1971, transportation's contribution had fallen to 3.0 percent by 1980 and to 2.5 percent in 1986. Real growth is expected to remain under 3 percent for 1987 and 1988, flat in 1989, and at 1.8 percent in 1990. Transportation accounted for 1.9 percent of total employment in 1986, down from 2.3 percent of the civilian labor force in 1971.

The average annual wage rate has grown steadily and was estimated to be $23,600 per year in 1986. This reflects 32.5 percent growth since 1980, slightly below the 34.0 percent growth observed in the average annual manufacturing wage rate. Transportation wages are expected to grow an average of 6.6 percent a year through 1990 to reach $29,900 by the end of the decade.

Communications

From 1971 to 1986 output in Alabama's communications industry grew 188 percent, lead only by electrical and nonelectrical machinery which grew 310 percent and 200 percent respectively over the same period. Further, the communications industry in Alabama has experienced real growth every year since 1971. Accounting for 2.5 percent of GSP in 1971, communications' share rose to 4.5 percent by 1986. The present forecast calls for communications to grow by more than 5.3 percent a year for the balance of the decade.



In 1971 communications employed 14,800 persons. By 1986 there were 7,500 new jobs that had been created to push communications employment to 22,300, an increase of over 50 percent. To put this in perspective, employment in the U.S. communications industry grew by 23 percent over the same period. The current forecast calls for communications employment to increase every year through the end of the decade to reach 25,400 by 1990—up 3,100 jobs over 1986.

The communications industry pays well, too. The 1986 average annual wage was $27,700, well above manufacturing's average wage of $19,400. In 1990 the average communications worker is expected to earn $35,300 per year.

Public Utilities

Output growth has been quite good, averaging 6.7 percent a year over the past 15 years. As a result public utilities' contribution to Alabama GSP has grown steadily since 1971, rising from 2.8 percent to 3.6 percent in 1986. The current forecast calls for strong growth through 1990 except for 1989 when output growth is expected to be flat as a result of the anticipated economic slowdown.

The smallest of the TCPU industries, public utilities employed 18,900 persons in 1986 and paid an average annual wage of $30,300. This wage is one of the highest paid by any major industrial group within the State—rivaled only by the paper industry at $31,000. Wages are expected to grow through 1990 when they are forecasted to reach $37,100.

GOVERNMENT

The Alabama government sector is composed of State and local government agencies, federal civilian, and federal military. While some believe government activity is a service, others argue that government is not a *contributor* to the regional economy. Government does play two major roles in support of the Alabama economy: government payrolls (spending by government workers) contribute substantially to trade, services, FIRE, and TCPU; and public works (the most tangible product of government labor) are an important ingredient in the mix of factors essential to economic growth.

Government Highlights

	1887	1988	1989	1990
Real Government Output				
Growth Rate	4.4%	4.3%	3.1%	4.1%
Share of Total GSP	14.9%	14.9%	15.2%	15.1%
Government Wages				
Average Annual Wage (Cur $)	$19,300	$20,400	$21,700	$23,000
Growth Rate	4.0%	5.4%	6.7%	5.9%

State, local, and federal government agencies (hereafter referred to simply as government) were estimated to have contributed 14.8 percent of Alabama's Gross State Product in 1986. Although a rather sizable share, government output as a percent of GSP has actually been declining. In 1971 government accounted for 17.9 percent of GSP. By 1980 government's share of GSP had fallen to 16.2 percent. This trend is not expected to continue. Government output is expected to grow an average of 4.2 percent a year through 1990. As a result government's share of GSP is expected to rise slightly to 15.1 percent by 1990.

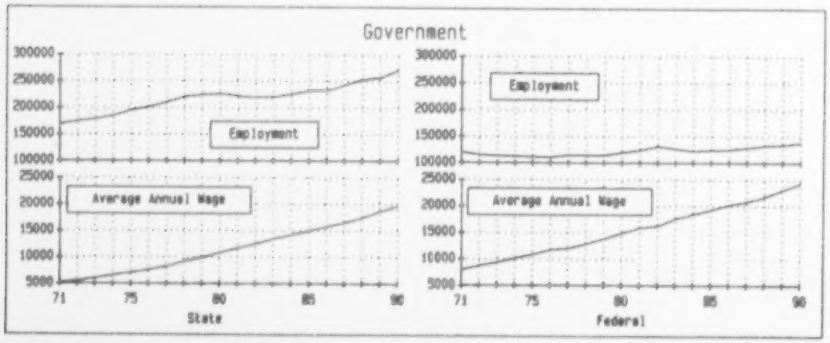
The majority of the growth in government is expected to occur at the State and local level. Federal government is currently forecasted to grow an average of 1.6 percent a year to 1990. State and local government is forecasted to grow slightly more than 6 percent a year over the same period.

The pattern is consistent with recent trends. Over the period 1980 to 1986 federal government activity in Alabama grew an average of 0.3 percent a year. Over the same period State and local governments grew an average of 1.7 percent a year. As State and local governments work to improve Alabama's infrastructure and local services, this trend is very likely to continue.

State and local employment has steadily increased, rising an average of 2.5 percent a year from 1971 through 1986. Accounting for 12.2 percent of all workers in 1971, State and local government employees held a 13.1 percent share of total Alabama employment by 1986.

Federal civilian employment has grown slightly, rising from 59,500 in 1971 to 65,100 in 1986. Federal military employment has been much more cyclical. In 1971 there were 60,300 federal military personnel in Alabama. With the closing of Craig Air Force Base in Selma and other reductions throughout the State, federal military employment in Alabama dropped to 48,000 by 1976. From 1976 through 1982 the number rose, reaching a 20 year high in 1982 of 66,000. Since then the number of federal military personnel has varied from a low of 57,600 in 1984 to its present 60,100.

Government wages vary greatly across State and local and federal civilian and military. At $27,700, federal civilian workers earned the highest average annual wage of any government worker in 1986. State and local government employees were a distant second at $15,800 per year. Federal military were last with an average annual wage of $12,200.



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